## AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for detecting gunked and cracked ultrasonically tuned blades in an ultrasonic surgical system, comprising the steps of:

    applying a drive signal having a drive current level and a drive voltage level to an ultrasonic hand piece/blade using an ultrasonic generator;

    obtaining magnitude impedance data and impedance phase data for the hand piece/blade;

    comparing the impedance data to determine whether the impedance data is within acceptable limits; and

    if the impedance data is ~~with~~ within acceptable limits; displaying a message on a ~~liquid crystal~~ display of the generator.

2. (Original) The method of claim 1, wherein the step of applying the drive signal comprises exciting the hand piece with an ultrasonic signal across a predetermined frequency range.

3. (Original) The method of claim 2, wherein the predetermined frequency range is from 50 kHz to 60 kHz.

4. (Currently amended) The method of claim 1, wherein said obtaining step comprises the steps of :

    obtaining the magnitude impedance data and the impedance phase data for at least two excitation levels over a prescribed range.

5. (Original) The method of claim 4, wherein the prescribed range is from 5mA to 50mA.

6. (Currently amended) The method of claim 1, wherein said comparing step comprises the step of:

comparing at least one of a magnitude of a lowest impedance of the hand piece/blade, a maximum phase between the drive current and the drive voltage, or a blade resonance frequency to at least one of a non-linearity ~~and~~ or an evaluation of a continuousness of the data obtained.

7. (Currently amended) The method of claim 6, further comprising the step of:

displaying a first message on the liquid crystal display, if ~~any~~ impedance data ~~sweep~~ at a lower excitation level reveals a minimum impedance magnitude which is less than a minimum impedance magnitude obtained at a higher excitation level; and

displaying a second message on the liquid crystal display, if ~~any~~ impedance data ~~sweep~~ at a lower excitation level reveals one of ~~a~~ an unchanged minimum impedance magnitude ~~which is unchanged and~~ or a ~~higher~~ minimum impedance at the lower excitation level which is higher than the minimum impedance magnitude obtained at the higher excitation level.

8. (Currently amended) The method of claim 7, wherein the step of displaying the first message comprises displaying a "Blade Cracked" message on the ~~liquid crystal~~ display.

9. (Currently amended) The method of claim 7, wherein the ~~low~~ lower excitation level ranges from 5mA to 25mA.

10. (Currently amended) The method of claim 7, wherein the ~~high~~ higher excitation level ranges from 25 mA to 500mA.

11. (Currently amended) The method of claim 7, wherein the step of displaying the second message comprises displaying a "Blade Gunked" message on the ~~liquid crystal~~ display.

12. (Original) The method of claim 7, further comprising the steps of:

computing excess heat generated on a sheath of the hand piece/blade.

13. (Currently amended) The method of claim 12, wherein said excess ~~heated~~ heat is computed by calculating differences between impedance magnitudes.

14. (Original) The method of claim 13, wherein the difference between impedance magnitudes are displayed during the step of displaying the second message.

15. (Currently amended) The method of claim 12, further comprising the steps of:

at least ~~on~~ one of displaying a third message on the liquid crystal display, if said excess heat indicates that the hand piece/blade is hot; ~~and~~ or

shutting down the ultrasonic surgical system.

16. (Currently amended) The method of claim 15, wherein the step of displaying the third message comprises displaying a "Hot Hand Piece" message on the ~~liquid crystal~~ display.

17. (Currently amended) A method for detecting gunked and cracked ultrasonically tuned blades in an ultrasonic surgical system, comprising the steps of:

obtaining magnitude impedance data and impedance phase data for one of a new blade and a ~~known~~ blade having known characteristics;

applying a drive signal having a drive current level and a drive voltage level to an ultrasonic hand piece/blade comprising the new blade or the blade having known characteristics using an ultrasonic generator;

obtaining impedance data for the hand piece/blade;

comparing the impedance data of the ultrasonic hand piece/blade to the impedance data of one of the new blade and the ~~known~~ blade having known characteristics to determine whether the impedance data of the ultrasonic hand piece/blade is within acceptable limits; and

if the impedance data is with acceptable limits; displaying a message on a ~~liquid crystal~~ display of the generator.

18. (Original) The method of claims 17, wherein the step of applying the drive signal comprises exciting the hand piece with an ultrasonic signal across a predetermined frequency range.

19. (Original) The method of claim 18, wherein the predetermined frequency range is from 50 kHz to 60 kHz.

20. (Original) The method of claim 17, wherein said obtaining step comprises the step of:

obtaining magnitude impedance data and impedance phase data for at least two excitation levels over a prescribed range.

21. (Currently amended) The method of claim ~~17~~ 20, wherein the prescribed range is from 5mA to 50mA.

22. (Currently amended) The method of claim 17, wherein said comparing step comprises the step of:

comparing at least one of a magnitude of a lowest impedance, a maximum phase between the drive current and the drive voltage, or a blade resonance frequency to at least one of a non-linearity ~~and~~ or an evaluation of a continuousness of the data obtained.

23. (Currently amended) The method of claim 22, further comprising the step of:

displaying a first message on the ~~liquid crystal~~ display, if ~~any~~ impedance data ~~sweep~~ at a lower excitation level reveals a minimum impedance magnitude which is less than a minimum impedance magnitude obtained at a higher excitation level; and

displaying a second message on the ~~liquid crystal~~ display, if any impedance data sweep at a lower excitation level reveals one of ~~a~~ an unchanged minimum impedance magnitude ~~which is unchanged and~~ or a higher minimum impedance at the lower excitation level which is higher than the minimum impedance magnitude obtained at the higher excitation level.

24. (Currently amended) The method of claim ~~22~~ 23, wherein the step of displaying the first message comprises displaying a "Blade Cracked" message on the ~~liquid crystal~~ display.

25. (Currently amended) The method of claim 23, wherein the ~~low~~ lower excitation level ranges from 5mA to 25mA.

26. (Currently amended) The method of claim 23, wherein the ~~high~~ higher excitation level ranges from 25 mA to 500mA.

27. (Currently amended) The method of claim 23, wherein the step of displaying the second message comprises displaying a "Extent of Gunk" message on the ~~liquid crystal~~ display.

28. (Currently amended) The method of claim 23, further comprising the step of:

computing excess heat generated on a sheath of ~~he~~ the hand piece/blade.

29. (Original) The method of claim 28, wherein said excess heated is computed by calculating differences between impedance magnitudes.

30. (Original) The method of claim 29, wherein the differences between impedance magnitudes are displayed during the step of displaying the second message.

31. (Currently amended) The method of claim 28, further comprising the steps of:

at least one of displaying a third message on the ~~liquid crystal~~ display, if said excess heat indicates that the hand piece/blade is hot; ~~and~~ or

shutting down the ultrasonic surgical system.

32. (Currently amended) The method of claim 31, wherein the step of displaying the third message comprises displaying a "Hot Hand Piece" message on the ~~liquid crystal~~ display.

33. (Withdrawn)

34. (Withdrawn)

35. (Withdrawn)

36. (Withdrawn)

37. (Withdrawn)

38. (Withdrawn)

39. (Withdrawn)

40. (Withdrawn)

41. (Withdrawn)

42. (Withdrawn)

43. (Withdrawn)

44. (Withdrawn)

45. (Withdrawn)